

REMARKS

1. Summary of Office Action Mailed August 17, 2005

In the Office Action mailed August 17, 2005, with claims 1-8 pending, the Examiner (i) made certain objections to the drawings, specification, and claims and (ii) rejected claims 1-8 under 35 U.S.C. § 103(a) as being unpatentable over the combination of U.S. Patent No. 6,714,515 (Marchand) and U.S. Patent No. 6,668,175 (Almgren).

2. Pending Claims

Presently pending in this application are claims 1-8, of which claims 1 and 7 are independent. Claims 1-4 and 6-8 are amended herein.

3. Response to Examiner's Objections

The Examiner made certain objections to the drawings, specification, and claims. Applicant has herein made amendments to address the Examiner's concerns. Specifically, with respect to the drawings, Applicant submits replacements sheets for Figures 1, 3, and 6, as described above, to address reference-numeral problems and to label Figure 1 as prior art. With respect to the specification and claims, Applicant herein makes amendments to address the Examiner's specific objections. In addition, Applicant makes further amendments throughout the specification and claims that are consistent with addressing the spirit of Examiner's concerns. Applicant therefore respectfully requests that the Examiner withdraw his objections.

4. Summary of the Claimed Invention

The independent claims relate to processing a service request message received from a mobile station. In accordance with the present invention, a radio access network (RAN) receives a service request message from a mobile station. The RAN then determines whether the service

request message requests a circuit-related service (such as a VoIP call) or a packet-related service (such as another type of packet-data session). (As specified by the dependent claims, this determination may be made by examining an IP address in the service request message.) Based on that determination, one of two sequences ensue, both of which result in a bearer (radio traffic channel) being assigned between the RAN and the mobile station.

If the service request message requests a circuit-related service, the RAN facilitates the circuit-related service being set up via a conventional circuit-switching entity such as an MSC. In particular, the RAN transmits a CM service request message to the MSC, receives an acknowledgement message from the MSC, and responsively assigns the bearer.

If the service request message requests a packet-related service, the RAN facilitates the packet-related service being set up via a packet-switching entity such as an IP session manager. In particular, the RAN transmits the service request message to a core network without processing the message. The service request message is then processed at the core network, and an assignment request is transmitted to the radio network, requesting that the radio network assign a bearer. The RAN then responsively assigns a bearer for the mobile station.

5. The Prior Art

a. Marchand

Marchand is generally directed to a radio network server (RNS) that is modified to function as a policy server to provide radio network resource allocation rules in an integrated wireless IP network. With respect to call setup and bearer assignment, Marchand teaches that all calls are set up by cooperation of the RNS and one or more entities known as bandwidth brokers. Furthermore, Marchand teaches that the “RNS controls radio resources and allocates radio resources to users.” Marchand, column 6, lines 17 to 19.

Essentially, Marchand teaches that, in addition to being responsible for controlling radio resources, the RNS functions as a server to provide information to a bandwidth broker about the bandwidth, quality of service, etc. to which the RNS can commit for a particular communication session. See Marchand, Abstract. The bandwidth broker can thus more reliably set up an end-to-end communication session involving a link between a RAN and a mobile station, where the entire session can be conducted with a certain quality of service.

b. Almgren

Almgren is generally directed to providing radio access bearer services for different applications. With respect to call setup and bearer assignment, Almgren teaches that all calls are set up by cooperation of the radio network and an entity referred to as a radio access bearer management node, which resides “in the network between [the] core network and radio access networks.” Almgren, column 6, lines 15-17. This node instructs the radio network to assign bearers to mobile stations based on certain session parameters, which the node obtains either by extracting the parameters from an ongoing communication session or by communicating with one or both of the session endpoints, such as a mobile station and/or an application server. See Almgren, column 7, line 56 to column 8, line 63.

6. Response to Examiner’s Rejections

The Examiner rejected claims 1-8 under 35 U.S.C. § 103(a) as being unpatentable over the combination of Marchand and Almgren. Among the requirements to establish a *prima facie* case of obviousness is that the prior art references when combined must teach or suggest all the claim limitations. MPEP § 2143. Applicant respectfully submits that the combination of Marchand and Almgren fails to teach or suggest the distributed processing of service request messages to which the presently-pending claims are directed.

In particular, neither Marchand nor Almgren teach or suggest determining whether a service request message requests a circuit-related service (such as a VoIP call) or a packet-related service (such as another type of packet-data session), and then sending a CM service request message to an MSC in the former case, and forwarding the service request message to an IP session manager in a core network for processing in the latter case.

As explained above, both Marchand and Almgren teach schemes in which all service request messages are processed – and bearer channels assigned – by cooperation between an entity in the RAN and at least one entity external to the RAN, either in the core network or between the RAN and the core network. Neither reference contemplates handling requests for VoIP calls by sending a CM service request message to an MSC and forwarding requests for other packet-data sessions to a core network for processing. As such, claims 1 and 7, as amended, are patentable over the combination of Marchand and Almgren. Moreover, claims 2-6 and 8 are patentable for at least the reason that they depend from an allowable claim.

7. Conclusion

Applicant submits that all of the pending claims are now in condition for allowance. Therefore, Applicant respectfully requests favorable action. Should the Examiner have any questions, the Examiner is encouraged to contact the undersigned at 312-913-3305.

Respectfully submitted,

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AMENDMENTS TO THE DRAWINGS

The Examiner made certain objections to Figures 1, 3, and 6. Applicant submits replacement sheets for those Figures with this response. These replacement sheets address the Examiner's concerns. Therefore, Applicant respectfully requests that the Examiner withdraw his objections to the drawings.

With respect to Figure 1, the reference numerals that are not used in the specification have been removed. Furthermore, Figure 1 has been labeled as prior art, in accordance with the Examiner's request.

With respect to Figure 3, the reference numerals that are not used in the specification have been removed.

With respect to Figure 6, the reference numeral '33' has been replaced with the reference numeral 'S20'.